

10/576236

IAP20 Rec'd FCI PTO 14 APR 2006

CLAIMS

1. An information acquisition device which acquires digital information functioning by executing a control program stored in program memory, comprising:
 - 5 a first transmission unit having directivity and transmitting by wireless an information request signal to be transmitted in a direction of the directivity;
 - 10 an information addition unit adding at least one piece of address information to the information request signal to be transmitted;
 - 15 a reception unit receiving a radio signal transmitted by wireless in response to the information request signal transmitted by the first transmission unit, and acquiring information contained in the signal;
 - 20 an information storage unit which is built in the information acquisition device or attached to the device as removable from the device, and can store all or a part of information acquired by the reception unit; and
 - 25 an operation unit issuing an instruction to start an information requesting operation, wherein the reception unit has no directivity or has broader directivity than the first transmission unit.
- 25 2. The device according to claim 1, wherein

the first transmission unit transmits by wireless
a signal using an electromagnetic wave including light
and a sound wave including ultrasonic.

5 3. The device according to claim 2, wherein
 an address added by the information addition unit
 to an information request signal is an own address as
 an address of the reception unit of the information
 acquisition device.

10 4. The device according to claim 3, wherein
 the address added by the information addition unit
 to an information request signal includes an address
 different from the address of the reception unit of the
 information acquisition device.

15 5. The device according to claim 3, further
 comprising
 an information presentation unit presenting all
20 or a part of information stored in the information
 storage unit or information acquired by the reception
 unit.

25 6. The device according to claim 5, further
 comprising

an information transmission unit externally transmitting information stored in the information storage unit and information acquired by the reception unit.

5

7. The device according to claim 6, further comprising

a selection unit selecting the information stored in the information storage unit, wherein

10 the information transmission unit externally transmits the information selected by the selection unit.

8. The device according to claim 6, wherein
15 the information transmission unit transmits information to an address indicating a predetermined destination.

9. The device according to claim 5, further
20 comprising

a setting unit setting information relating to a type of information received and acquired by the reception unit, wherein

25 the information addition unit further adds information relating to a type of information set by

the setting unit to the signal to be transmitted.

10. The device according to claim 9, further comprising

5 an information screen unit screening the information received by the reception unit, wherein: information to be acquired is screened by the information screen unit from the information received by the reception unit, and the screened information is 10 stored in the information storage unit.

11. The device according to claim 10, wherein screening standards of the information screened by the information screen unit designate a type of 15 information set by the setting unit, and only the information of the type set by the setting unit is stored in the information storage unit.

12. The device according to claim 9, wherein 20 the information relating to the type of identification relates to at least one of a size of information, a type of information, a style of information, a file format of information, a content of information, and a field of information.

13. The device according to claim 9, wherein
the information relating to a type of information
refers to information indicating a same target and a
different type of information capacity.

5

14. The device according to claim 13, wherein
the information relating to a type of information
includes information relating to at least one type of
common information, summary information obtained by
10 summarizing the common information, and the address
information in a network containing information.

15. The device according to claim 5, further
comprising:

15 a server address extraction unit extracting a
server address designating an information providing
source contained in the information acquired by the
reception unit; and

20 a second transmission unit transmitting a signal
in a style different from a style of the first
transmission unit.

16. The device according to claim 15, wherein
the second transmission unit transmits by
25 wireless a signal using an electromagnetic wave

including light and a sound wave including ultrasonic, and the signal transmitted by wireless from the second transmission unit has no directivity or has broader directivity than the signal transmitted by the first 5 transmission unit.

17. The device according to claim 16, wherein
when the information received by the reception
unit is address information in a network in which the
10 information exists, the second transmission unit
transmits an information request signal to the server
address extracted by the server address extraction unit.

18. The device according to claim 16, further
15 comprising:

a selection unit selecting at least an information item from the information presented by the information presentation unit; and

20 an ID information addition unit adding information ID designating information corresponding to the information item selected by the selection unit to the signal to be transmitted, wherein

the first transmission unit or the second transmission unit transmits the signal to be 25 transmitted.

19. The device according to claim 5, further comprising

5 a warning unit giving a warning when the information acquired by the reception unit is incomplete or when it is determined that information cannot be completely acquired.

20. The device according to claim 16, wherein
10 the first transmission unit or the second transmission unit retransmits the signal to be transmitted when the information acquired by the reception unit is incomplete or when it is determined that information cannot be completely acquired.

15
21. The device according to claim 19, wherein the warning unit gives a warning when a size of the information acquired by the reception unit exceeds a predetermined size or a free storage capacity of the
20 information storage unit.

22. The device according to claim 19, wherein
25 the warning unit gives a warning when the information received and acquired by the reception unit relates to a size of continually transmitted information,

and the size of the information exceeds a predetermined size or a free storage capacity of the information storage unit.

5 23. The device according to claim 20, wherein
 when the size of the information acquired by the
 reception unit exceeds a predetermined size or a free
 storage capacity of the information storage unit, the
 information is automatically changed to the information
10 relating to a type of information of a smaller size,
 the information addition unit adds the information
 relating to the type of information to the signal to
 be transmitted, and the first transmission unit or the
 second transmission unit retransmits the added signal
15 to be transmitted.

24. The device according to claim 5, further
comprising
 an information size setting unit setting a maximum
20 value of a size of information that can be received and
 acquired by the reception unit, wherein
 the information addition unit further adds
 information relating to the maximum value of the size
 of the information that can be acquired and is set by
25 the information size setting unit to the signal to be

transmitted.

25. The device according to claim 24, wherein
the information size setting unit automatically
5 sets the maximum value of the size of the information
that can be acquired based on the free storage capacity
of the information storage unit.

26. The device according to claim 5, further
10 comprising

a user information storage unit storing
information relating to a user of the information
acquisition device, wherein

15 the information addition unit further adds the
information relating to the user and stored in the user
information storage unit to the signal to be
transmitted.

27. The device according to claim 5, further
20 comprising

an equipment information storage unit storing
equipment information about the information
acquisition device, wherein

25 the information addition unit further adds the
equipment information about the information

acquisition device stored in the equipment information storage unit to the signal to be transmitted.

28. The device according to claim 27, wherein
5 the equipment information contains at least one or more of a maker name of the information acquisition device, a model number, a product serial number, and version information about firmware.

10 29. The device according to claim 5, further comprising:
an information acquisition history storage unit storing information designation information designating the information received by the reception
15 unit; and
an acquired information determination unit determining whether or not information newly received by the reception unit is acquired according to the information designation information about the newly received information, wherein
20 the information storage unit stores information determined by the acquired information determination unit that the information has not been acquired in the information received by the reception unit.

30. The device according to claim 29, wherein
the information designation information stored in
the information acquisition history storage unit is
information containing at least one of an address of
5 a device which transmits the signal received by the
reception unit and the information ID assigned to the
information received by the reception unit.

31. The device according to claim 5, further
10 comprising
a detection unit detecting that there is an
information providing device capable of providing
information for the information acquisition device in
the direction of the directivity.

15

32. The device according to claim 31, wherein:
the detection unit further comprises:
an issued signal reception unit receiving
an issued signal from the information providing
20 device; and
a notification unit notifying that there is
the information providing device detected when
the issued signal is received by the issued signal
reception unit.

33. The device according to claim 31, wherein when the detection unit does not detect presence of the information providing device, an information acquiring operation is not performed.

5

34. The device according to claim 5, further comprising

10 a program update unit extracting a control program, and updating all or a part of the control program stored in the program memory to be updated based on the control program when the control program of the information acquisition device is contained in the signal received by the reception unit.

15 35. The device according to claim 34, further comprising:

an unreasonable program check unit detecting whether or not an unreasonable program is contained in the information acquired by the reception unit;

20 an unreasonable program warning unit giving a warning when it is detected by the unreasonable program check unit that an unreasonable program is contained in the information acquired by the reception unit; and

25 an unreasonable program deletion unit deleting acquired information when it is detected by the

unreasonable program check unit that an unreasonable program is contained in the information acquired by the reception unit.

5 36. The device according to claim 5, further comprising

an encryption unit encrypting all or a part of the information added by the information addition unit to the signal to be transmitted using an encryption key
10 contained in the information received and acquired by the reception unit.

37. The device according to claim 36, wherein
the information addition unit further adds the
15 encryption key request information to the signal to be transmitted.

38. The device according to claim 5, further comprising:

20 an encryption key generation unit generating an encryption key and a decryption key; and

a decryption unit decrypting encrypted information contained in the signal received by the reception unit using the decryption key, wherein
25 the information addition unit adds an encryption

key generated by the encryption key information generation unit to the signal to be transmitted.

39. The device according to claim 5, wherein
5 the reception unit further comprises a communication unit using a public network and receiving, regenerating, and communicating common sound through the public network .

10 40. The device according to claim 5, further comprising

an image capturing unit obtaining image data by capturing a subject image in a same direction as the directivity direction of the signal transmitted by the
15 first transmission unit, wherein:

the information storage unit stores the image data captured by the image capturing unit in addition to the information acquired by the reception unit; and

20 the information presentation unit presents all or a part of the information or image data stored in the information storage unit, the information acquired by the reception unit, or the image data captured by the image capturing unit.

25 41. The device according to claim 40, further

comprising:

5 a mode setting unit setting at least one of a mode of acquiring only information, a mode of acquiring only an image, and a mode of acquiring both information and an image; and

 a mode switch unit switching a mode set by the mode setting unit.

42. The device according to claim 40, further
10 comprising

 an information transmission unit externally transmitting the information or image data stored in the information storage unit, the information acquired by the reception unit, or the image data captured by
15 the image capturing unit.

43. The device according to claim 42, further
comprising

20 a selection unit selecting the information or the image data stored in the information storage unit, wherein

 the information transmission unit externally transmits the information or the image data selected by the selection unit.

44. The device according to claim 43, wherein
the information transmission unit transmits
information to an address indicating a predetermined
destination.

5

45. The device according to claim 40, further
comprising

10 a setting unit setting information relating to a
type of information received and acquired by the
reception unit, wherein

the information addition unit further adds
information relating to a type of information set by
the setting unit to the signal to be transmitted.

15 46. The device according to claim 45, further
comprising

an information screen unit screening the
information received by the reception unit, wherein:
20 information to be acquired is selected by the
information screen unit from the information received
by the reception unit, and the screened information is
stored in the information storage unit.

25 47. The device according to claim 46, wherein
screening standards of the information screened

by the information screen unit designate a type of information set by the setting unit, and only the information of the type set by the setting unit is stored in the information storage unit.

5

48. The device according to claim 45, wherein
the information relating to the type of identification relates to at least one of a size of information, a type of information, a style of information, a file format of information, a content of information, and a field of information.

10
15 49. The device according to claim 45, wherein
the information relating to a type of information refers to information indicating a same target and a different type of information size.

50. The device according to claim 49, wherein
the information relating to a type of information includes information relating to at least one type of common information, summary information obtained by summarizing the common information, and address information in a network containing information.

20
25 51. The device according to claim 40, further

comprising:

5 a server address extraction unit extracting a server address designating an information providing source contained in the information acquired by the reception unit; and

 a second transmission unit transmitting a signal in a style different from a style of the first transmission unit.

10 52. The device according to claim 51, wherein the second transmission unit transmits by wireless a signal using an electromagnetic wave including light and a sound wave including ultrasonic, and the signal transmitted by wireless from the second 15 transmission unit has no directivity or has broader directivity than the signal transmitted by the first transmission unit.

20 53. The device according to claim 52, wherein when the information received by the reception unit is address information in a network in which the information exists, the second transmission unit transmits an information request signal to the server address extracted by the server address extraction unit.

54. The device according to claim 52, further comprising:

5 a selection unit selecting at least an information item from the information presented by the information presentation unit; and

10 an ID information addition unit adding information ID designating information corresponding to the information item selected by the selection unit to the signal to be transmitted, wherein

15 the first transmission unit or the second transmission unit transmits the signal to be transmitted.

55. The device according to claim 40, further comprising

20 a warning unit giving a warning when the information acquired by the reception unit is incomplete or when it is determined that information cannot be completely acquired.

56. The device according to claim 52, wherein
25 the first transmission unit or the second transmission unit retransmits the signal to be transmitted when the information acquired by the reception unit is incomplete or when it is determined

that information cannot be completely acquired.

57. The device according to claim 55, wherein
the warning unit gives a warning when a size of
5 the information acquired by the reception unit exceeds
a predetermined size or a free storage capacity of the
information storage unit.

58. The device according to claim 55, wherein
10 the warning unit gives a warning when the
information received and acquired by the reception unit
relates to a size of continually transmitted information,
and the size of the information exceeds a predetermined
size or a free storage capacity of the information
15 storage unit.

59. The device according to claim 58, wherein
when the size of the information acquired by the
reception unit exceeds a predetermined size or a free
20 storage capacity of the information storage unit, the
information is automatically changed to the information
relating to a type of information of a smaller size,
the information addition unit adds the information
relating to the type of information to the signal to
be transmitted, and the first transmission unit or the
25

second transmission unit retransmits the added signal to be transmitted.

60. The device according to claim 40, further
5 comprising

an information size setting unit setting a maximum value of a size of information that can be received and acquired by the reception unit, wherein

10 the information addition unit further adds information relating to the maximum value of the size of the information that can be acquired and is set by the information size setting unit to the signal to be transmitted.

15 61. The device according to claim 60, wherein the information size setting unit automatically sets the maximum value of the size of the information that can be acquired into the free storage capacity of the information storage unit.

20 62. The device according to claim 40, further comprising

25 a user information storage unit storing information relating to a user of the information acquisition device, wherein

the information addition unit further adds the information relating to the user and stored in the user information storage unit to the signal to be transmitted.

5

63. The device according to claim 40, further comprising

an equipment information storage unit storing equipment information about the information acquisition device, wherein

the information addition unit further adds the equipment information stored in the equipment information storage unit to the signal to be transmitted.

15

64. The device according to claim 63, wherein

the equipment information contains at least one or more of a maker name of the information acquisition device, a model number, a product serial number, and version information about firmware.

65. The device according to claim 40, further comprising:

an information acquisition history storage unit storing information designation information

designating the information received by the reception unit; and

an acquired information determination unit determining whether or not information newly received by the reception unit has been acquired before according to the information designation information about the newly received information, wherein

the information storage unit stores information determined by the acquired information determination unit that the information has not been acquired in the information received by the reception unit.

66. The device according to claim 30, wherein the information designation information stored in the information acquisition history storage unit is information containing either one of an address of a device which transmits the signal received by the reception unit or the information ID assigned to the information received by the reception unit.

20 67. The device according to claim 40, further comprising

25 a detection unit detecting that there is an information providing device capable of providing information for the information acquisition device in

the direction of the directivity.

68. The information acquisition device according to
claim 67, wherein

5 the detection unit further comprises:

an issued signal reception unit receiving
an issued signal from the information providing
device; and

10 a notification unit notifying that there is
the information providing device detected when
the issued signal is received by the issued signal
reception unit.

69. The information acquisition device according to
15 claim 67, wherein

when the detection unit does not detect presence
of the information providing device, an information
acquiring operation is not performed.

20 70. The device according to claim 67, wherein

when the detection unit does not detect existence
of the information providing device, and when the mode
setting unit sets a mode of acquiring both information
and an image, an image is captured only as in the mode
25 of acquiring only an image.

71. The device according to claim 40, further comprising

5 a program update unit extracting a control program, and updating all or a part of the control program stored in the program memory to be updated based on the control program when the control program of the information acquisition device is contained in the signal received by the reception unit.

10

72. The device according to claim 71, further comprising:

15 an unreasonable program check unit detecting whether or not an unreasonable program is contained in the information acquired by the reception unit;

an unreasonable program warning unit giving a warning when it is detected by the unreasonable program check unit that an unreasonable program is contained in the information acquired by the reception unit; and

20 an unreasonable program deletion unit deleting acquired information when it is detected by the unreasonable program check unit that an unreasonable program is contained in the information acquired by the reception unit.

25

73. The device according to claim 40, further comprising

an encryption unit encrypting all or a part of the information added by the information addition unit to the signal to be transmitted using an encryption key contained in the information received and acquired by the reception unit.

74. The device according to claim 73, wherein
10 the information addition unit further adds the encryption key request information to the signal to be transmitted.

75. The device according to claim 40, further
15 comprising:

an encryption key generation unit generating an encryption key and a decryption key; and
a decryption unit decrypting encrypted information contained in the signal received by the
20 reception unit using the decryption key, wherein
the information addition unit adds an encryption key generated by the encryption key information generation unit to the signal to be transmitted.

25 76. The device according to claim 40, wherein

the reception unit further comprises a communication unit using a public network and receiving, regenerating, and communicating common voice through the public network.

5

77. An information providing device capable of providing information at an information request from the information acquisition device according to at least one of claims 1 through 76, comprising:

10 an information database storing information to be provided;

15 a first information reception unit receiving a request signal transmitted by wireless from the first transmission unit having the directivity of the information acquisition device;

a request extraction unit extracting a destination address for designation of a destination of information from the request signal received by the first information reception unit; and

20 a first information transmission unit transmitting by wireless the information to be provided read at the request signal from the information database to a destination address according to the address information extracted by the request extraction unit.

25

78. The device according to claim 77, wherein
the destination address extracted by the request
extraction unit is an own address as an address of a
reception unit of the information acquisition device
5 receiving the provided information , and the first
information transmission unit transmits by wireless the
information to be provided read from the information
database at the request signal to the own address.

10 79. The device according to claim 78, further
comprising
a second information reception unit receiving the
signal transmitted by wireless from the second
transmission unit of the information acquisition device
15 in addition to the first information reception unit,
wherein
the first information transmission unit transmits
the address of second information reception unit to the
destination address extracted by the request extraction
unit.

20 80. The device according to claim 78, further
comprising
an ID information extraction unit extracting an
25 information ID designating information from the request

signal received by the first information reception unit or the second information reception unit, wherein

when the ID information extraction unit extracts the information ID from the request signal, the first 5 information transmission unit transmits by wireless the information corresponding to the information ID stored in the information database, and when the ID information extraction unit does not extract the information ID from the request signal received by the first information 10 reception unit, the first information transmission unit transmits by wireless predetermined information stored in the information database.

81. The device according to claim 80, wherein 15 when the information ID is not extracted from the request signal received by the first information reception unit, the first information transmission unit transmits by wireless index information about information which can be provided and stored in the 20 information database.

82. The device according to claim 77, further comprising 25 an information type extraction unit extracting the information relating to the type of the requested

information from the request signal received by the first information reception unit, wherein

5 the first information transmission unit transmits by wireless the information read from the information database according to the information relating to the type of information extracted by the information type extraction unit.

83. The device according to claim 77, further
10 comprising

an encryption unit encrypting the information to be transmitted by the first information transmission unit.

15 84. The device according to claim 77, further comprising

a signal transmission unit transmitting by wireless a signal for notification that information can be provided.

20 85. The device according to claim 77, wherein:

the first information reception unit comprises a plurality of reception units and an information selection unit selecting provided information
25 corresponding to each reception unit; and

the first information transmission unit transmits the information stored in the information database selected by the information selection unit.

5 86. The device according to claim 78, further comprising:

an equipment information extraction unit extracting equipment information about the information acquisition device from the request signal received by
10 the first information reception unit; and

a program information database storing a control program controlling and operating a device, wherein
the first information transmission unit transmits a control program corresponding to the equipment information stored in the program information database according to the equipment information extracted from
15 the request signal.

87. The device according to claim 77, wherein
20 the request extraction unit further extracts user information from a signal received by the first information reception unit, and the first information transmission unit transmits the information to be provided read corresponding to the user information from
25 the information database to the address extracted by

the request extraction unit.

88. The device according to claim 87, further comprising:

5 a user information determination unit determining a level of the user information from the user information extracted by the request extraction unit; and

10 a user information database storing the user information extracted by the request extraction unit, wherein

15 the information being transmitted by the first information transmission unit to the destination address extracted by the request extraction unit is read from the information database corresponding to the level of the user information determined by the user information determination unit.

89. The device according to claim 78, further comprising:

20 an encryption key information generation unit generating an encryption key and a decryption key; and

25 a decryption unit decrypting encrypted information contained in the signal received by the first information reception unit or the second information reception unit by the decryption key,

wherein

5 the first information transmission unit transmits an encryption key generated by the encryption key information generation unit to the destination address according to an address information extracted by the request extraction unit.

90, The device according to claim 77, further comprising:

10 an information providing history database storing a destination address when the first information transmission unit transmits information to be provided to the destination address; and

15 a determination unit determining whether or not a destination address extracted by the request extraction unit has been stored in the information providing history database before, wherein

20 the first information transmission unit transmits or does not transmit predetermined information read from the information database to a destination address extracted from the request extraction unit depending on a determination result by the determination unit.

91. The device according to claim 77, wherein:

25 the destination address to which the first

information transmission unit transmits information to be provided and ID information about the information to be provided for designation of the information to be provided are associated and stored in the information providing history database;

the determination unit determines whether or not the destination address extracted by the request extraction unit and the ID information about the information to be provided read from the information database are associated with and stored in the information providing history database, and

the first information transmission unit transmits or does not transmit request information read from the information database to a destination address extracted from the request extraction unit depending on a determination result by the determination unit.

92. The device according to 77, further comprising a second information transmission unit different from the first information transmission unit, wherein:

the request extraction unit extracts an own address from the signal received by the first information reception unit and a second address different from the own address;

the second information transmission unit

transmits the information to be provided read from the information database and the information extracted from the request extraction unit using the second address as a destination address; and

5 the first information transmission unit transmits, to the own address, transmission result information notifying that the information to be provided has been transmitted to the destination address of the information extracted by the request extraction unit.

10 93. The device according to 92, wherein when a destination address designating a destination of information different from the own address is not contained in the signal received by the first information reception unit, the first information transmission unit transmits the information to be provided to the own address extracted by the request extraction unit.

15 94. The device according to claim 77, further comprising:

 a third information transmission unit different from the first information transmission unit; and

20 a third information reception unit receiving a returned signal in response to a signal transmitted by

the third information transmission unit, wherein

the request extraction unit extracts request information contained in the signal received by the first information reception unit;

5 the third information transmission unit transmits a second request signal containing the information request to a predetermined address;

the third information reception unit receives a returned signal in response to the second request 10 signal; and

the first information transmission unit transmits the information contained in the returned signal received by the third information reception unit to the destination address.

15

95. The device according to claim 94, wherein

the request extraction unit further extracts information relating to a type of information from the signal received by the first information reception unit;

20 the third information transmission unit transmits a information request signal containing the information relating to the type of information to a second information providing device capable of providing information corresponding to the information relating 25 to the type of information when the information

corresponding to the information relating to the type of information extracted by the request extraction unit is not stored in the information database; and

5 when the information corresponding to the information relating to the type of information transmitted by the second information providing device is received by the third information reception unit, the first information transmission unit transmits the information corresponding to the information relating 10 to the type of information to the destination address extracted by the request extraction unit.

96. The device according to claim 94, wherein:

15 the request extraction unit further extracts the equipment information about a source of the signal received by the first information reception unit;

20 when the information corresponding to the equipment information extracted by the request extraction unit is stored in the information database, the third information transmission unit transmits the information read from the information database corresponding to the equipment information and predetermined information read from the information database to the destination address extracted by the 25 request extraction unit; or

when the information corresponding to the equipment information extracted by the request extraction unit is not stored in the information database, the third information transmission unit
5 transmits the information request signal containing the equipment information to the second information providing device capable of providing the information corresponding to the equipment information; and

when the information corresponding to the equipment information transmitted by the second information providing device is received by the third information reception unit, the first information transmission unit transmits the information corresponding to the equipment information and the predetermined information read from the information database to the destination address extracted by the request extraction unit.
10
15

97. The device according to claim 95, further comprising
20

a device designation unit designating a second information providing device capable of providing information corresponding to the information relating to the type of information, wherein
25

the third information transmission unit transmits

the information relating to the type of information to the second information providing device designated by the device designation unit.

5 98. The device according to claim 96, further comprising

a device designation unit designating a second information providing device capable of providing information corresponding to the equipment information,
10 wherein

the third information transmission unit transmits the equipment information to the second information providing device designated by the device designation unit.

15 99. The device according to claim 98, wherein the distribution contains at least one or more of a maker name of the information acquisition device, a model number, a product serial number, and version
20 information about firmware.

100. The device according to claim 77, further comprising

25 an information processing unit modifying the information transmitted by the first information

transmission unit.

101. The device according to claim 100, wherein
the information modifying unit compresses or
5 encrypts information.

102. An information providing system having an
information acquisition device which acquires digital
information functioning by executing a control program
10 stored in program memory, and an information providing
device capable of providing information according to
an information request from the information acquisition
device, wherein:

the information acquisition device comprises:
15 a first transmission unit having
directivity and transmitting by wireless a n
information request signal to be transmitted in
a direction of the directivity;

20 an information addition unit adding at
least one piece of address information to the
information request signal to be transmitted;

25 a reception unit having no directivity or
having directivity broader than the first
transmission unit, receiving a radio signal
transmitted by wireless in response to the

information request signal transmitted by the first transmission unit, and acquiring information contained in the signal;

5 an information storage unit which is built in the information acquisition device or attached to the device as removable from the device, and can store all or a part of information acquired by the reception unit; and

10 an operation unit issuing an instruction to start an information requesting operation; the information providing device comprises:

an information database storing information to be provided;

15 a first information reception unit receiving a request signal transmitted by wireless from the first transmission unit having the directivity of the information acquisition device;

20 a request extraction unit extracting at least a destination address for designation of a destination of information from the request signal received by the first information reception unit; and

25 a first information transmission unit transmitting by wireless the information to be

provided read at the request signal from the information database to a destination address according to the address information extracted by the request extraction unit; and

5 the reception unit and the first information transmission unit have no directivity or have broader directivity than the first transmission unit.

10 103. The system according to claim 102, wherein
an address added by an information storage unit
of the information acquisition device to an information
request signal comprises at least own address as an
address of the reception unit of the information
providing device.

15

104. The system according to claim 102, wherein:
the information acquisition device further
comprises

20 a user information storage unit storing
information relating to a user of the information
acquisition device;
in the information acquisition device,
the information addition unit further adds
25 the information relating to the user stored in the

user information storage unit to the information request signal to be transmitted; and in the information providing device,

5 the request extraction unit extracts the
information relating to the user from the request
signal received by the first information
reception unit, and the first information
transmission unit transmits information to be
provided read according to the information
relating to the user extracted by the request
extraction unit from the information database to
a destination address according to address
information extracted by the request extraction
unit.

15

105. The system according to claim 103, wherein
in the information acquisition device,
when information acquired by the reception
unit is incomplete or it is determined that
information cannot be completely acquired, the
first transmission unit retransmits the
information request signal to be transmitted.

20

106. The system according to claim 103, wherein
25 the information acquisition device further

comprises

a warning unit giving a warning when information acquired by the reception unit is incomplete or it is determined that information cannot be completely acquired.

107. The system according to claim 102, wherein:

the information acquisition device further comprises:

10 an equipment information storage unit
storing equipment information about the
information acquisition device; and

15 a program update unit extracting a control program, and updating all or a part of the control program stored in the program memory to be updated based on the control program when the control program of the information acquisition device is contained in the signal received by the reception unit;

20 the information providing device further
comprises:

an equipment information extraction unit extracting the equipment information from the request signal received by the first information reception unit; and

a program information database storing a control program for controlling and operating a device;

in the information acquisition device,

5 the information addition unit further adds the equipment information stored in the equipment information storage unit to the information request signal to be transmitted; and in the information providing device,

10 the first information transmission unit
further transmits by wireless the control program
corresponding to the equipment information stored
in the program information database according to
the equipment information extracted from the
15 equipment information extraction unit to a
destination address according to address
information extracted by the request extraction
unit.

20 108. The system according to claim 102, wherein:

the information acquisition device further comprises

25 a detection unit detecting that there is an information providing device capable of providing information for the information acquisition

device in the direction of directivity; and
the information providing device further
comprises a signal transmission unit transmitting
by wireless a signal notifying that information
can be provided.

5 109. The system according to claim 108, wherein
the information acquisition device does not
perform an information acquiring operation when
10 existence of the information providing device is not
detected by the detection unit.

110. The system according to claim 102, wherein:
the information acquisition device further
15 comprises

an image capturing unit obtaining image
data by capturing a subject image in a direction
same as the direction of directivity of the signal
transmitted by the first transmission unit; and
20 in the information acquisition device,

the information storage unit stores image
data captured by the image capturing unit in
addition to the information acquired by the
reception unit.

111. The system according to claim 110, wherein
the information acquisition device further
comprises:

5 a mode setting unit setting at least one of
a mode of acquiring only information, a mode of
acquiring only an image, and a mode of acquiring
both information and an image; and

a mode switch unit switching a mode set by
the mode setting unit.

10

112. The system according to claim 102, wherein:

the information acquisition device further
comprises

15 a setting unit setting the information
relating to the type of information received and
acquired by the reception unit;

the information providing device further
comprises

20 an information type extraction unit
extracting the information relating to the type
of requested information form the request signal
received by the first information reception unit;
in the information acquisition device,

25 the information addition unit further adds
the information relating to the type of

information set by the setting unit to the signal to be transmitted; and
in the information providing device,

5 the first information transmission unit further transmits by wireless the information read from the information database according to the information relating to the type of information extracted by the information type extraction unit.

10 113. The system according to claim 112, wherein:
the information acquisition device further comprises:

15 a setting unit setting the information relating to the type of information received and acquired by the reception unit; and

20 a warning unit giving a warning when a size of the information acquired by the reception unit exceeds a predetermined size or a free storage capacity of the information storage unit;

the information providing device further comprises

25 an information type extraction unit extracting the information relating to the type of requested information form the request signal

received by the first information reception unit;
in the information acquisition device,

the information addition unit further adds the information relating to the type of information set by the setting unit to the signal to be transmitted; and

in the information providing device.

the first information transmission unit further transmits by wireless the information read from the information database according to the information relating to the type of information extracted by the information type extraction unit.

15 114. The system according to claim 113, wherein
in the information acquisition device,

when a size of the information acquired by the reception unit exceeds a predetermined size or a free storage capacity of the information storage unit, the information is automatically changed to information relating to the type of information having a smaller size, the information addition unit adds the information relating to the type of information and at least one piece of address information to the

information request signal to be transmitted, and the first transmission unit re-transmits the added information request signal to be transmitted.

5

115. The system according to claim 103, wherein: the information acquisition device further comprises:

10 an information presentation unit presenting all or a part of information stored in the information storage unit or information acquired by the reception unit;

15 a selection unit selecting at least one information item from the information presented by the information presentation unit; and

20 an ID information addition unit adding the information ID designating the information corresponding to the information item selected by the selection unit to the information request signal to be transmitted;

the information providing device further comprising

25 an ID information extraction unit extracting an information ID designating information from the request signal received by

the first information reception unit;
in the information acquisition device,

the first transmission unit further transmits by wireless an information request signal to which the information ID and at least one piece of address information are added which is to be transmitted;

in the information providing device,

when the ID information extraction unit
extracts the information ID from the request
signal, the first information transmission unit
transmits by wireless the information
corresponding to the information ID stored in the
information database, and

15 when the ID information extraction unit
does not extract the information ID from the
request signal received by the first information
reception unit, the first information
transmission unit transmits by wireless
20 predetermined information stored in the
information database.

116. The system according to claim 103, wherein
the information acquisition device further
comprises

an information transmission unit externally transmitting the information stored in the information storage unit or the information acquired by the reception unit.

5

117. The system according to claim 110, wherein the information acquisition device further comprises

10 an information transmission unit transmitting the information or image data stored in the information storage unit, or the information acquired by the reception unit to an address indicating a predetermined destination.

15 118. The system according to claim 103, wherein: the information acquisition device further comprises:

20 an encryption key information generation unit generating an encryption key and a decryption key; and

decryption unit decrypting, using the decryption key, information encrypted and contained in the signal received by the reception unit;

25 the information providing device further

comprises

an encryption unit encrypting information transmitted by the first information transmission unit;

5 in the information acquisition device,

the information addition unit adds the encryption key generated by the encryption key information generation unit to the signal to be transmitted; and

10 in the information providing device,

the request extraction unit further extracts the encryption key from the request signal received by the first information reception unit; and

15 the first information transmission unit transmits by wireless the information to be provided read according to the request signal from the information database and encrypted by the encryption unit to the destination address based
20 on the address information extracted by the request extraction unit.

119. The system according to claim 103, wherein:

the information acquisition device further
25 comprises:

an information acquisition history storage unit storing the information designation information for designating the information received by the reception unit; and

5 an acquired information determination unit determining according to the information designation information for the information newly received by the reception unit whether or not the newly received identification has been acquired; 10 in the information acquisition device,

the information storage unit stores the information determined by the acquired information determination unit as not acquired yet in the information received by the reception unit;

15 in the information providing device,

the information database further stores the information designation information designating the information to be provided; and

20 the first information transmission unit transmits by wireless the information to be provided read from the information database according to the request signal and the information designation information designating the information to be provided to the destination 25

address according to the address information extracted by the request extraction unit.

120. The system according to claim 103, wherein:

5 the information acquisition device further
comprises:

a user information storage unit storing information relating to a user of the information acquisition device; and

10 an encryption unit encrypting information;
the information providing device further
comprises:

an encryption key information generation unit generating an encryption key and a decryption key; and

a decryption unit decrypting using the decryption key the encrypted information contained in the signal received by the first information reception unit; and

the encryption unit encrypts information relating to the user stored in the user information storage unit using the encryption key extracted from the information acquired by the reception unit; and

the information addition unit further adds the encrypted information relating to the user to the information request signal to be transmitted.

5 121. The system according to claim 103, wherein:
the information acquisition device further
comprises:

10 a second transmission unit transmitting a signal having no directivity or having broader directivity than the first transmission unit;

an information presentation unit presenting all or a part of information stored in the information storage unit or information acquired by the reception unit;

15 a selection unit selecting at least one information item from the information presented by the information presentation unit;

20 an ID information addition unit adding an information ID designating information corresponding to the information item selected by the selection unit to the signal transmitted by the second transmission unit; and

25 a server address extraction unit extracting a server address designating an information source contained in the information acquired by

the reception unit;
the information providing device further comprises:

5 a second information reception unit receiving the signal transmitted by wireless by the second transmission unit of the information acquisition device; and

10 an ID information extraction unit extracting an information ID designating information from the signal received by the second information reception unit;

in the information acquisition device,

15 the information addition unit further adds at least one piece of address information to the signal transmitted by the second information transmission unit; and

20 the second transmission unit transmits by wireless the signal to which the information ID and at least one piece of address information are added to the server address extracted by the server address extraction unit; and
in the information providing device,

25 when the information ID is not extracted by the ID information extraction unit from a request signal received by the first information

reception unit, the first information transmission unit transmits by wireless predetermined information stored in the information database and an address of the second information reception unit; and

when the information ID is extracted by the ID information extraction unit from the signal received by the second information reception unit, the first information transmission unit transmits by wireless the information corresponding to the information ID stored in the information database.

122. The system according to claim 102, wherein in the information acquisition device,

the reception unit uses a public network, and comprises a communication unit capable of receiving and regenerating common voice and performing communications.

123. The information providing device according to claim 122, wherein in the information acquisition device,

when the signal received by the reception unit is a communication signal, the communication

unit can receive, regenerate, and communicate common voice.

124. The system according to 102, wherein

5 a first reception unit of the information providing device comprises a plurality of reception units, each reception unit is associated with information to be presented, the information associated with the reception unit receiving a request signal is 10 read from the information database, and the first information transmission unit transmits the information.

125. The system according to claim 111, wherein:

15 the information acquisition device further comprises

a detection unit detecting existence of an information providing device capable of providing information for the information acquisition device in the direction of the directivity;

20 the information providing device further comprises

25 a signal transmission unit transmitting by wireless a signal notifying that information can be provided; and

the information acquisition device does not perform an information acquiring operation when the existence of the information providing device is not detected.

5

126. The system according to claim 103, wherein the information acquisition device further comprises

10 a transmission/reception unit transmitting an information request signal to a server address presented by the address information through the Internet when the information received by the reception unit is the address information on the network in which the information exists, and 15 receiving information corresponding to the information request signal through the Internet.

127. The system according to claim 112, wherein: the information acquisition device further 20 comprises

an analysis unit analyzing whether or not the information received by the reception unit is information relating to the information type set by the setting unit; and
25 when, as a result of the analysis of the analysis

unit, the information received by the reception unit is the information relating to the set information type, the received information is stored, and otherwise a warning is given.

5

128. The system according to claim 102, wherein:

the information providing device further comprises a second information transmission unit different from the first information transmission unit;

10 the request extraction unit extracts an own address from the signal received by the first information reception unit and a second address different from the own address;

15 the second information transmission unit transmits information to be provided read from the information database and the information extracted by the request extraction unit to the second address as a destination address; and

20 the first information transmission unit transmits, to the own address, transmission result information notifying that the information to be provided has been transmitted to the destination address of the information extracted by the request extraction unit.

25 129. The system according to claim 102, wherein:

the information providing device further comprises:

5 an information providing history database storing a destination address used when the transmission unit transmits predetermined information to the destination address; and

10 a determination unit determining whether or not the destination address extracted by the request extraction unit has been stored in the information providing history database; and in the information providing device,

15 the first transmission unit transmits or does not transmit predetermined information read from the information database to a destination address extracted by the request extraction unit based on a determination result by the determination unit.

130. The system according to claim 104, wherein:

20 the information providing device further comprises:

25 a user information level determination unit determining a level of user information from the user information extracted by the request extraction unit; and

a user information database storing the user information extracted by the extraction unit; and
in the information providing device,

5 the first transmission unit transmits information read from the information database depending on the level of the user information determined by the user information level determination unit to the destination address
10 extracted by the extraction unit.

131. The system according to claim 102, further comprising:

15 a third information transmission unit different from the first information transmission unit; and

a third information reception unit receiving a returned signal responding to a signal transmitted by the third information transmission unit, wherein

20 the request extraction unit extracts request information contained in a signal received by the first information reception unit;

the third information transmission unit transmits a second request signal containing the information request to a predetermined address;

25 the third information reception unit receives a

returned signal responding to the second request signal;
and

5 the first information transmission unit transmits
information contained in the returned signal received
by the third information reception unit to the
destination address.

132. The system according to claim 128, wherein
the information providing device further
10 comprises:

an information providing history database
storing a destination address used when
predetermined information is transmitted to the
destination address by the transmission unit; and
15 a determination unit determining whether or
not the destination address extracted by the
extraction unit has been stored in the information
providing history database; and
in the information providing device,

20 the second information transmission unit
transmits or does not transmit predetermined
information read from the information database to
a destination address extracted by the request
extraction unit based on a determination result
25 by the determination unit.

133. The system according to claim 128, wherein:
the information providing device further
comprises:

5 a user information level determination unit
determining a level of user information by the user
information extracted by the request extraction unit;
and

10 a user information database storing the
user information extracted by the extraction
unit;

15 in the information acquisition device,
 the information addition unit further adds
the user information of the information
acquisition device to the information request
signal; and

20 in the information providing device,
 the request extraction unit further
extracts user information from the request signal
received by the first information reception unit;
and

25 the second information transmission unit
transmits to the destination address extracted by
the extraction unit the information read from the
information database depending on a determination

level of the user information determined by the user information level determination unit.

134. The system according to claim 128, further
5 comprising:

a third information transmission unit different from the first information transmission unit; and

10 a third information reception unit receiving a returned signal responding to the signal transmitted by the third information transmission unit; wherein

the request extraction unit extracts request information contained in the signal received by the first information reception unit;

15 the third information transmission unit transmits a second request signal containing the information request to a predetermined address;

the third information reception unit receives a returned signal responding to the second request signal; and

20 the second information transmission unit transmits the information contained in the returned signal received by the third information reception unit to the destination address.

25 135. An information providing method in an information

providing system having an information acquisition device which acquires digital information and an information providing device capable of providing information at an information request from the 5 information acquisition device, wherein:

the information acquisition device performs:
adding to an information request signal at least an address specifying a destination of information;

10 transmitting by wireless the added information request signal as a signal having directivity in a directivity direction;

the information providing device performs:
receiving an information request signal transmitted by wireless in the directivity direction;

15 extracting the address from the received information request signal; and

transmitting by wireless information read at the information request signal from an information database storing information to be provided to the extracted address.

20 136. The method according to claim 135, wherein:
the destination address is an address of the

information acquisition device; and

5 a signal including the information transmitted by wireless from the information providing device has no directivity, or is transmitted as a signal having broader directivity than the information request signal.

137. The method according to claim 135, wherein:

10 the information acquisition device performs;
adding user information about the information acquisition device to the information request signal; and

the information providing device performs:
further extracting the user information from the received information request signal; and
transmitting by wireless the information read according to the user information extracted from the information database to the extracted address.

20 138. The method according to claim 136, wherein
the information acquisition device performs
retransmitting by wireless the added information request signal in the directivity direction when the received information is

incomplete, or when it is determined that information cannot be completely acquired.

139. The method according to claim 136, wherein
5 the information acquisition device performs giving a warning when the received information is incomplete, or when it is determined that information cannot be completely acquired.

10 140. The method according to claim 136, wherein:
the information acquisition device performs further adding equipment information about the information acquisition device to the information request signal;

15 The information providing device performs:
further extracting the equipment information from the received information request signal; and
further transmitting by wireless a control program corresponding to the equipment information stored in a program information database to the extracted address of the information acquisition device according to the extracted equipment information; and
20 the information acquisition device performs:
25

further receiving the control program transmitted by wireless; and

5 updating all or a part of the control program for control of an operation of the information acquisition device stored in program memory based on the received control program.

141. The method according to claim 135, wherein
the information providing device performs
transmitting by wireless a signal notifying
that information can be provided when the
information can be provided; and
the information acquisition device performs
acquiring information when a signal
notifying that the information can be provided can
be detected in the directivity direction.

142. The method according to claim 141, wherein
the information acquisition device performs
acquiring no information when a signal
notifying that the information can be provided
cannot be detected in the directivity direction.

143. The method according to claim 135, wherein
the information acquisition device perform

5 capturing a subject image in a same direction as the directivity direction and acquiring image data in addition to an information acquiring operation after an instruction to acquire information is issued, and storing the acquired image data in addition to the received information.

10 144. The method according to claim 143, wherein the information acquisition device performs setting at least one of or switching settings of: a mode of acquiring only information; a mode of acquiring only an image; and a mode of acquiring both information and an image, and performing an operation depending on the set or switched mode.

15 145. The method according to claim 135, wherein: the information acquisition device performs setting information relating to a type of received information;

20 further adding information relating to a type of the set information to the information request signal; and the information providing device performs: further extracting the information relating to the type of information from the

25

received information request signal; and
transmitting by wireless the information
read according to the information relating to the
type of information extracted from the
information database to the extracted address.

146. The method according to claim 136, wherein:
the information acquisition device performs:
setting information relating to a type of
10 received information; and
further adding information relating to the
type of the received information; and
the information providing device performs:
further extracting the information
relating to the type of information from the
15 received information request signal; and
transmitting by wireless the information
read according to the information relating to the
type of information extracted from information
database to the address of the information
20 terminal device; and
the information acquisition device performs
giving a warning when a size of the received
information exceeds a predetermined size or a free
25 storage capacity of the information storage unit.

147. The method according to claim 136, wherein:
the information acquisition device performs:
 setting information relating to a type of
5 received information; and
 further adding information relating to the
 type of the received information; and
 the information providing device performs:
 further extracting the information
10 relating to the type of information from the
 received information request signal; and
 transmitting by wireless the information
 read according to the information relating to the
 type of information extracted from information
15 database to the address of the information
 terminal device; and
 the information acquisition device performs
 automatically changing information
 relating to a type of information having small
20 information size, and transmitting by wireless an
 information request signal to which the
 information relating to the type of the changed
 information and an address of the information
 acquisition device is added in the directivity
 direction when a size of the received information
25

exceeds a predetermined size or a free storage capacity of the information storage unit.

148. The method according to claim 136, wherein:
5 the information acquisition device performs:

presenting all or a part of stored information or the received information;

selecting at least one information item from the presented information;

10 further adding information ID designating information corresponding to the selected information item to the information request signal; and

the information providing device performs:

15 transmitting by wireless the information read according to the information ID from the information database to the extracted address of the information terminal device when the information ID designating the information can be further extracted from the received information 20 request signal;

transmitting by wireless predetermined information stored in the information database to the extracted address of the information terminal device when the information ID designating the

information cannot be extracted from the received information request signal.

149. The method according to claim 143, wherein
5 the information acquisition device performs
externally transmitting stored information
or image data, or the received information.

150. The method according to claim 143, wherein
10 the information acquisition device performs
transmitting stored information or image
data, or the received information to a
predetermined destination address.

15 151. The method according to claim 136, wherein:
the information acquisition device performs:
generating an encryption key and a
decryption key; and
further adding the generated encryption key
20 to the information request signal;
the information providing device performs:
further extracting the encryption key from
the received information request signal;
encrypting the information read according
25 to the information request signal from the

information database using the extracted encryption key; and

transmitting by wireless the encrypted information to the extracted address of the information terminal device; and

5 the information acquisition device performs:

decrypting the received information using the generated decryption key; and
storing the decrypted information.

10

152. The method according to claim 136, wherein:

the information providing device performs

transmitting by wireless the information read according to the request signal from the information database and the information designation information for designating the information to the extracted address of the information acquisition device; and

15 the information acquisition device performs:

20 receiving the information transmitted by wireless and the information designation information for designating the information;

determining whether or not the received information has already been acquired according to the information designation information for

25

further extracting the encrypted user information from the received information request signal;

5 decrypting the extracted user information using the generated decryption key; and

 transmitting by wireless the information read according to the decrypted user information from the information database to the extracted address of the information terminal device.

10

154. The method according to claim 136, wherein:

 the information providing device performs

 transmitting by wireless predetermined information stored in the information database and the address of the information providing device to the extracted address of the information terminal device from the information request signal when the information request signal transmitted by wireless in the directivity direction is received;

20

 the information acquisition device performs:

 receiving the information transmitted by wireless and the address of the information providing device;

25

 presenting all or a part of stored

information of the received information on a display unit of the information acquisition device;

5 selecting at least one information item from the presented information; and

10 transmitting by wireless an information request signal to which an information ID designating information corresponding to the selected information item and the address of the information acquisition device are added to the received address of the information providing device; and

the information providing device performs:

15 receiving an information request signal transmitted by wireless to the address of the information providing device;

 extracting the information ID and the address of the information acquisition device from the received information request signal; and

20 transmitting by wireless the information read corresponding to the extracted information ID from the information database to the extracted address of the information terminal device.

25 155. An information providing method for use with an

information providing system having an information acquisition device which is provided with telephone functions and acquires digital information and an information providing device capable of providing 5 information at an information request from the information acquisition device, wherein:

the information acquisition device performs:
adding a telephone number of the information acquisition device to an information request signal; and
transmitting by wireless the added information request signal in a directivity direction;
the information providing device performs:
receiving the information request signal transmitted by wireless in the directivity direction;
extracting the telephone number of the information terminal device from the received information request signal; and
transmitting information read from an information database according to the information request signal to the extracted telephone number of the information terminal device using a public network; and

the information acquisition device performs:
receiving the transmitted information; and
storing the received information.

5 156. The method according to claim 155, wherein
the information acquisition device performs
receiving, regenerating, and transmitting
common voice when a communication signal is
received.

10 157. the method according to claim 135, wherein
the information providing device performs
providing a plurality of reception units
receiving the information request signal, reading
information corresponding to the reception unit
receiving the information request signal from the
information database, and transmitting by
wireless the read information to the extracted
address of the information terminal device.

15 20 25 158. The method according to claim 144, wherein:
the information providing device performs
transmitting by wireless a signal notifying
that information can be provided when the
information can be provided; and

the information acquisition device performs
acquiring information when a signal
notifying that the information can be provided can
be detected in the directivity direction.

5

159. The method according to claim 136, wherein
the information acquisition device performs
transmitting an information request signal
to a server address presented by the address
information through the Internet when the
received information is the address information
on the network in which the information exists,
and receiving information corresponding to the
information request signal through the Internet.

10

160. The method according to claim 145, wherein:
the destination address is an address of the
information acquisition device; and
the information acquisition device performs:

15

analyzing whether or not the received
information is information relating to the set
information type, and when the received
information is the information relating to the set
type of the information, storing the received
information, and otherwise giving a warning.

20

25

161. The method according to claim 135, wherein:
the address added to the information request
signal in the information acquisition device is a
5 destination address different from the address of the
information acquisition device; and
the information providing device performs
transmitting predetermined information
read from the information database storing the
10 information to be provided to the extracted
destination address different from the source of
the information request signal.

162. The method according to claim 161, wherein
15 the information providing device performs:
storing the destination address each time
the predetermined information is transmitted to
the destination address; and
determining whether or not the destination
20 address extracted from the information request
signal has been stored when the information
request signal is received, and transmitting or
not transmitting the predetermined information
depending on the determination result.

163. The method according to claim 161, wherein:
the information acquisition device performs
further adding user information of the
information terminal device to the information
request signal; and
5 the information providing device performs:
further extracting the user information
from the received information request signal;
determining a level of the user information
from the extracted user information; and
10 transmitting the information read from the
information database depending on the determined
level of the user information to the extracted
destination address.

15
164. The method according to claim 135, wherein
the information providing device performs:
extracting the address from the received
information request signal;
20 transmitting the information request
signal to the destination different from the extracted
destination address;
receiving returned information responding
to the transmitted information request signal; and
25 transmitting predetermined information

read from the information database storing information to be provided and the received and returned information to the extracted address.

5 165. An information acquisition program which is a computer program executed by an information acquisition device having:

an information storage unit which is built in and freely attached and removed and stores information;

10 a first transmission unit having directivity and transmitting by wireless an information request to be transmitted in a directivity direction; and

a reception unit having no directivity or having broader directivity than the first transmission unit, 15 wherein:

an information request signal to be transmitted is generated;

at least one piece of address information is added to the generated information request signal;

20 the information request signal to which at least one piece of address information is added is transmitted from the first transmission unit in the directivity direction;

the reception unit receives a radio signal 25 transmitted by wireless in response to the information

request signal transmitted from the first transmission unit; and

the storage unit stores all or a part of information contained in the signal.

5

166. The program according to claim 165, wherein the first transmission unit transmits by wireless the information request signal using an electromagnetic wave including light and a sound wave including 10 ultrasonic.

167. The program according to claim 166, wherein the address added to the information request signal is own address as an address of the reception 15 unit of the information acquisition device.

168. the program according to claim 167, wherein the address added to the information request signal includes an address different from the address 20 of the reception unit of the information acquisition device.

169. The program according to claim 167, wherein the information acquisition device further 25 comprises an information presentation unit for

presenting information; and

the information presentation unit presents all or a part of the information stored in the information storage unit or the information acquired by the reception unit.

5

170. The program according to claim 169, wherein the information acquisition device further comprises an information transmission unit for transmitting information; and

10 the information transmission unit externally transmits the information stored in the information storage unit or the information acquired by the receiving function.

15

171. The program according to claim 170, wherein:

the information stored in the information storage unit is selected; and
20 the information transmission unit externally transmits the selected information.

25

172. The program according to claim 170, wherein the information transmission unit transmits information to an address indicating a predetermined destination.

173. The program according to claim 169, wherein:
information relating to a type of information
received and acquired by the reception unit is set; and
5 the information relating to the type of the set
information is added to the signal to be transmitted.

174. The program according to claim 173, wherein
the information to be acquired from the
10 information received by the reception unit is selected,
and the selected information is stored in the
information storage unit.

175. The program according to claim 174, wherein
15 standards of the selection is a set type of the
information, and only information of the type is stored
in the information storage unit.

176. The program according to claim 173, wherein
20 the information relating to the type of
information relates to at least one of a size of
information, a type of information, a style of
information, a file format of information, a content
of information, and a field of information.

177. The program according to claim 173, wherein
the information relating to a type of information
refers to information indicating a same target and a
different type of information size.

5

178. The program according to claim 177, wherein
the information relating to a type of information
includes information relating to at least one piece of
common information, summary information obtained by
10 summarizing the common information, and address
information in a network containing information.

179. The program according to claim 169, wherein
a server address designating an information
15 providing source contained in the information acquired
by the reception unit is extracted.

180. The program according to claim 179, wherein
the information acquisition device further
20 comprises a second transmission unit transmitting a
signal in a style different from a style of the first
transmission unit;

the second transmission unit transmits by
wireless a signal using an electromagnetic wave
25 including light and a sound wave including ultrasonic,

and the signal transmitted by wireless from the second transmission unit has no directivity or has broader directivity than the signal transmitted by the first transmission unit.

5

181. The program according to claim 180, wherein when the information received by the reception unit is address information in a network in which the information exists, the second transmission unit 10 transmits an information request signal to the extracted server address.

182. The program according to claim 180, wherein: 15 selecting at least an information item from the information presented by the information presentation unit;

adding information ID designating information corresponding to the selected information item selected by the selection unit to the signal to be transmitted; 20 and

the first transmission unit or the second transmission unit transmits the signal to be transmitted.

25 183. The program according to claim 169, wherein

a warning is given when the information acquired by the reception unit is incomplete or when it is determined that information cannot be completely acquired.

5

184. The program according to claim 180, wherein the first transmission unit or the second transmission unit retransmits the signal to be transmitted when the information acquired by the 10 reception unit is incomplete or when it is determined that information cannot be completely acquired.

185. The program according to claim 183, wherein a warning is given when a size of the information 15 acquired by the reception unit exceeds a predetermined size or a free storage capacity of the information storage unit.

186. The program according to claim 183, wherein a warning is given when the information received 20 and acquired by the reception unit relates to a size of continually transmitted information, and the size of the information exceeds a predetermined size or a free storage capacity of the information storage unit.

25

187. The program according to claim 184, wherein
when the information size acquired by the
reception unit exceeds a predetermined size or a free
storage capacity of the information storage unit, the
5 information is automatically changed to the information
relating to a type of information of a smaller size,
the information relating to the type of information is
added to the signal to be transmitted, and the first
transmission unit or the second transmission unit
10 retransmits the added signal to be transmitted.

188. The program according to claim 169, wherein:
a maximum value of a size of information that can
be received and acquired by the reception unit is set;
15 and
information relating to the set maximum value of
the information size that can be acquired is added to
the signal to be transmitted.

189. The program according to claim 188, wherein
the maximum size value of the information that can
be acquired into the free storage capacity of the
information storage unit is set automatically.

190. The program according to claim 169, wherein:

the information acquisition device further comprises a user information storage unit storing information relating to a user of the information acquisition device; and

5 the information relating to the user of the information acquisition device stored in the user information storage unit is added to the signal to be transmitted.

10 191. The program according to claim 169, wherein the information acquisition device further comprises an equipment information storage unit storing equipment information about the information acquisition device; and

15 the equipment information about the information acquisition device stored in the equipment information storage unit is added to the signal to be transmitted.

192. The program according to claim 191, wherein
20 the equipment information contains at least one or more of a maker name of the information acquisition device, a model number, a product serial number, and version information about firmware.

25 193. The program according to claim 169, wherein:

the information acquisition device further comprises an information acquisition history storage unit storing information designation information designating the information received by the reception unit;

5 it is determined whether or not information newly received by the reception unit has been acquired before according to the information designation information about the newly received information; and

10 the information storage unit stores information determined by the acquired information determination unit that the information has not been acquired among the information received by the reception unit.

15 194. The program according to claim 193, wherein the information designation information stored in the information acquisition history storage unit is information containing at least either one of an address of a device which transmits the signal received by the 20 reception unit or the information ID assigned to the information received by the reception unit.

195. The program according to claim 169, wherein it is detected that there is an information 25 providing device capable of providing information for

the information acquisition device in the direction of the directivity.

196. The program according to claim 195, wherein:

5 the information acquisition device further comprises an issued signal reception unit receiving an issued signal from the information providing device; and

10 it is notified that there is the information providing device detected when the issued signal is received by the issued signal reception unit.

197. The program according to claim 195, wherein when the presence of the information providing 15 device is not detected, an information acquiring operation is not performed.

198. The program according to claim 169, wherein a program update unit extracting a control program, 20 and updating all or a part of the control program stored in the program memory to be updated based on the control program when the control program of the information acquisition device is contained in the signal received by the reception unit.

199. The program according to claim 198, wherein:
it is detected whether or not an unreasonable
program is contained in the information acquired by the
reception unit; and

5 when it is detected that an unreasonable program
is contained in the information acquired by the
reception unit, a warning is given and the acquired
information is deleted.

10 200. The program according to claim 169, wherein
all or a part of the information added to the
signal to be transmitted is encrypted using an
encryption key contained in the information received
and acquired by the reception unit.

15 201. The program according to claim 200, wherein
the encryption key request information is added
to the signal to be transmitted.

20 202. The program according to claim 169, wherein:
an encryption key and a decryption key are
generated;
the generated encryption key is added to the
signal to be transmitted; and
25 the encrypted information contained in the signal

received by the reception unit is decrypted using the generated decryption key.

203. The program according to claim 169, wherein
5 the reception unit uses a public network, and can receive, regenerate, and communicate common sound through the public network.

204. The program according to claim 169, wherein:
10 the information acquisition device further comprises an image capturing unit obtaining image data by capturing a subject image in a same direction as the directivity direction of the signal transmitted by the first transmission unit:

15 the information storage unit stores the image data acquired by the image capturing unit in addition to the information acquired by the reception unit; and
the information presentation unit all or a part of the information or image data stored in the
20 information storage unit, the information acquired by the reception unit, or the image data obtained by the image capturing unit.

205. The program according to claim 204, wherein:
25 at least one of a mode of acquiring only

information, a mode of acquiring only an image, and a mode of acquiring both information and an image is set.

206. The program according to claim 204, wherein
5 the information acquisition device further comprises an information transmission unit for transmitting information; and

the information transmission unit externally transmits the information or image data stored in the 10 information storage unit, the information acquired by the reception unit, or the image data obtained by the image capturing unit.

207. The program according to claim 206, wherein:
15 the information or the image data stored in the information storage unit is selected; and
the information transmission unit externally transmits the selected information or the image data.

208. The program according to claim 207, wherein
20 the information transmission unit transmits information to an address indicating a predetermined destination.

209. The program according to claim 204, wherein:

information relating to a type of information received and acquired by the reception unit is set; and the information relating to the type of the set information is added to the signal to be transmitted.

5

210. The program according to claim 209, wherein the information to be acquired from the information received by the reception unit is selected, and the selected information is stored in the 10 information storage unit.

211. The program according to claim 210, wherein standards of the selection is a type of the set information, and only information of the type is stored 15 in the information storage unit.

212. The program according to claim 209, wherein the information relating to the type of information relates to at least one of a size of 20 information, a type of information, a style of information, a file format of information, a content of information and a field of information.

213. The program according to claim 177, wherein 25 the information relating to a type of information

refers to information indicating a same target and a different type of information size.

214. The program according to claim 213, wherein
5 the information relating to a type of information includes information relating to at least one piece of common information, summary information obtained by summarizing the common information, and address information in a network containing information.

10 215. The program according to claim 204, wherein a server address designating an information providing source contained in the information acquired by the reception unit is extracted.

15 216. The program according to claim 215, wherein the information acquisition device further comprises a second transmission unit transmitting a signal in a style different from a style of the first
20 transmission unit;
the second transmission unit transmits by wireless a signal using an electromagnetic wave including light and a sound wave including ultrasonic, and the signal transmitted by wireless from the second
25 transmission unit has no directivity or has broader

directivity than the signal transmitted by the first transmission unit.

217. The program according to claim 216, wherein
5 when the information received by the reception unit is address information in a network in which the information exists, the second transmission unit transmits an information request signal to the extracted server address.

10 218. The program according to claim 216, wherein:
 selecting at least an information item from the information presented by the information presentation unit;

15 adding information ID designating information corresponding to the selected information item selected by the selection unit to the signal to be transmitted;
 and

20 the first transmission unit or the second transmission unit transmits the signal to be transmitted.

219. The program according to claim 204, wherein
25 a warning is given when the information acquired by the reception unit is incomplete or when it is

determined that information cannot be completely acquired.

220. The program according to claim 216, wherein
5 the first transmission unit or the second transmission unit retransmits the signal to be transmitted when the information acquired by the reception unit is incomplete or when it is determined that information cannot be completely acquired.

10 221. The program according to claim 219, wherein a warning is given when a size of the information acquired by the reception unit exceeds a predetermined size or a free storage capacity of the information storage unit.
15

222. The program according to claim 219, wherein a warning is given when the information received and acquired by the reception unit relates to a size 20 of continually transmitted information, and the size of the information exceeds a predetermined size or a free storage capacity of the information storage unit.

223. The program according to claim 219, wherein 25 when the information size acquired by the

reception unit exceeds a predetermined size or a free storage capacity of the information storage unit, the information is automatically changed to the information relating to a type of information of a smaller size,
5 the information relating to the type of information is added to the signal to be transmitted, and the first transmission unit or the second transmission unit retransmits the added signal to be transmitted.

10 224. The program according to claim 204, wherein:
a maximum size value of information that can be received and acquired by the reception unit is set; and
information relating to the set maximum size value of the information that can be acquired is added to the
15 signal to be transmitted.

225. The program according to claim 224, wherein
the maximum size value of the information that can be acquired into the free storage capacity of the
20 information storage unit is set automatically.

226. The program according to claim 204, wherein:
the information acquisition device further comprises a user information storage unit storing
25 information relating to a user of the information

acquisition device; and

the information relating to the user of the information acquisition device stored in the user information storage unit is added to the signal to be
5 transmitted.

227. The program according to claim 204, wherein
the information acquisition device further
comprises an equipment information storage unit storing
10 equipment information about the information
acquisition device; and

the equipment information about the information acquisition device stored in the equipment information storage unit is added to the signal to be transmitted.

15
228. The program according to claim 227, wherein
the equipment information contains at least one
or more of a maker name of the information acquisition
device, a model number, a product serial number, and
20 version information about firmware.

229. The program according to claim 204, wherein:
the information acquisition device further
comprises an information acquisition history storage
25 unit storing information designation information

designating the information received by the reception unit;

5 it is determined whether or not information newly received by the reception unit has been acquired already or not according to the information designation information about the newly received information; and

10 the information storage unit stores information determined by the acquired information determination unit that the information has not been acquired among the information received by the reception unit.

230. The program according to claim 229, wherein the information designation information stored in the information acquisition history storage unit is 15 information containing at least either one of an address of a device which transmits the signal received by the reception unit or the information ID assigned to the information received by the reception unit.

20 231. The program according to claim 204, wherein it is detected that there is an information providing device capable of providing information for the information acquisition device in the direction of the directivity.

232. The program according to claim 231, wherein:
the information acquisition device further
comprises an issued signal reception unit receiving an
issued signal from the information providing device;
and
it is notified that there is the information
providing device detected when the issued signal is
received by the issued signal reception unit.

10 233. The program according to claim 231, wherein
when the presence of the information providing
device is not detected, an information acquiring
operation is not performed.

15 234. The program according to claim 231, wherein
when existence of the information providing
device is not detected, and when a mode of acquiring
both information and an image is set, only an image is
captured as in the mode of acquiring only an image.

20 235. The program according to claim 204, wherein
a program update unit extracting a control program,
and updating all or a part of the control program stored
in the program memory to be updated based on the control
program when the control program of the information

acquisition device is contained in the signal received by the reception unit.

236. The program according to claim 235, wherein:

5 it is detected whether or not an unreasonable program is contained in the information acquired by the reception unit; and

10 when it is detected that an unreasonable program is contained in the information acquired by the reception unit, a warning is given and the acquired information is deleted.

237. The program according to claim 204, wherein

15 all or a part of the information added to the signal to be transmitted is encrypted using an encryption key contained in the information received and acquired by the reception unit.

238. The program according to claim 237, wherein

20 the encryption key request information is added to the signal to be transmitted.

239. The program according to claim 204, wherein:

25 an encryption key and a decryption key are generated;

the generated encryption key is added to the signal to be transmitted; and

the encrypted information contained in the signal received by the reception unit is decrypted using the 5 generated decryption key.

240. The program according to claim 204, wherein the reception unit uses a public network, and can receive, regenerate, and communicate common voice 10 through the public network.

241. An information providing program as a computer program executed by a information providing device capable of providing information at an information 15 request from at least from the information acquisition device, comprising:

an information database storing information to be provided;

a first information reception unit receiving a 20 request signal transmitted by wireless from a first transmission unit having the directivity of any information acquisition device according to claims 1 through 76; and

25 a first information transmission unit transmitting information, wherein:

a destination address designating a destination of information is extracted from the request signal received by the first information reception unit; and the information to be provided read according to 5 the request signal from the information database is transmitted by wireless from the first information transmission unit to the destination address according to the extracted address information.

10 242. The program according to claim 241, wherein the extracted destination address is own address as an address of a reception unit receiving the provided information of the information acquisition device, and the first information transmission unit transmits by 15 wireless the information being provided read from the information database at the request signal to the own address.

243. The program according to claim 242, wherein: 20 The information providing device further comprises a second information reception unit receiving the signal transmitted by wireless from the second transmission unit of the information acquisition device in addition to the first information reception unit; 25 and

the first information transmission unit transmits the address of second information reception unit to the destination address extracted by the request extraction unit.

5

244. The program according to claim 242, wherein when an information ID designating information is extracted from the request signal received by the first information reception unit or the second information reception unit, the first information transmission unit transmits by wireless the information corresponding to the information ID stored in the information database, and when the information ID is not extracted from the request signal received by the first information reception unit, the first information transmission unit transmits by wireless predetermined information stored in the information database.

245. The program according to claim 244, wherein when the information ID is not extracted from the request signal received by the first information reception unit, the first information transmission unit transmits by wireless index information about information which can be provided and stored in the information database.

246. The program according to claim 241, wherein
the information relating to the type of the
requested information is extracted from the request
5 signal received by the first information reception unit;
and

the first information transmission unit transmits
by wireless the information read from the information
database according to the information relating to the
10 type of the extracted information.

247. The program according to claim 241, wherein
the information transmitted by the first
information transmission unit is encrypted.

15

248. The program according to claim 241, wherein
the information providing device further
comprises a signal transmission unit transmitting by
wireless a signal for notification that information can
20 be provided.

249. The program according to claim 241, wherein:
the first information reception unit comprises a
plurality of reception units each of which is associated
25 with information to be provided;

information associated with a reception unit receiving the request signal is selected;

the selected information is read from the information database; and

5 the read information is transmitted from the first information transmission function.

250. The program according to claim 242, wherein:

10 the information providing device further comprises a program information database storing a control program controlling and operating a device;

equipment information about the information acquisition device is extracted from the request signal received by the first information reception unit; and

15 the first information transmission unit transmits a control program read corresponding to the equipment information extracted from the program information database.

20 251. The program according to claim 241, wherein

user information is extracted from a signal received by the first information reception unit, and the first information transmission unit transmits the information to be provided read corresponding to the 25 user information from the information database to the

extracted address.

252. The program according to claim 251, wherein:
a level of the user information is determined from
5 the extracted user information; and
the information to be transmitted by the first
information transmission unit to the extracted
destination address is read from the information
database corresponding to the level of the determined
10 user information.

253. The program according to claim 242, wherein:
an encryption key and a decryption key are
generated;
15 the first information transmission unit transmits
the generated encryption key to the destination address
according to the extracted address information; and
the encrypted information contained in the signal
received by the first information reception unit or the
20 second information reception unit is decrypted by the
generated decryption key.

254. The program according to claim 241, wherein:
the information providing device further
25 comprises an information providing history database

storing the destination address when the first information transmission unit transmits information to be provided to the destination address;

5 it is determined whether or not the extracted destination address has been stored;

the first information transmission unit transmits or does not transmit predetermined information read from the information database to the extracted destination address depending on the determination result.

10

255. The program according to claim 241, wherein:

15 The information providing device further comprises an information providing history database storing a destination address to which the first information transmission unit transmits information to be provided and ID information about the information to be provided for designation of the information to be provided with the address and the ID information associated with each other;

20 it is determined whether or not the extracted destination address and the ID information about the information to be provided read from the information database are associated and stored in the information providing history database, and

25 the first information transmission unit transmits

or does not transmit request information read from the information database to the extracted destination address depending on the determination result.

5 256. The program according to 241, wherein:

the information providing device further comprises a second information transmission unit different from the first information transmission unit;

10 own address and a second address different from the own address are extracted from the signal received by the first information reception unit;

15 the second information transmission unit transmits the information to be provided read from the information database and the extracted information using the second address as a destination address; and

20 the first information transmission unit transmits, to the own address, transmission result information notifying that the information to be provided has been transmitted to the destination address of the extracted information.

257. The program according to 256, wherein

when a destination address designating a destination of information different from the own address is not contained in the signal received by the

first information reception unit, the first information transmission unit transmits the information to be provided to the extracted own address.

- 5 258. The program according to claim 241, wherein:
 - the information providing device further comprises a third information transmission unit different from the first information transmission unit and a third information reception unit receiving a returned signal responding to a signal transmitted by the third information transmission unit;
 - request information contained in the signal received by the first information reception unit is extracted;
- 10 15 the third information transmission unit transmits a second request signal containing the information request to a predetermined address;
- 15 20 the third information reception unit receives a returned signal in response to the second request signal; and
- 20 25 the first information transmission unit transmits the information contained in the returned signal received by the third information reception unit to the destination address.

259. The program according to claim 258, wherein
information relating to a type of information is
extracted from the signal received by the first
information reception unit;

5 the third information transmission unit transmits
a information request signal containing the information
relating to the type of information to a second
information providing device capable of providing
information corresponding to the information relating
10 to the type of information when the information
corresponding to the information relating to the type
of the extracted information is not stored in the
information database; and

15 when the information corresponding to the
information relating to the type of information
transmitted by the second information providing device
is received by the third information reception unit,
the first information transmission unit transmits the
information corresponding to the information relating
20 to the type of information to the extracted destination
address.

260. The program according to claim 258, wherein:
the equipment information about a source of the
25 signal received by the first information reception unit

is extracted;

when the information corresponding to the extracted equipment information is stored in the information database, the third information transmission unit transmits the information read from the information database corresponding to the equipment information and predetermined information read from the information database to the extracted destination address; or

when the information corresponding to the extracted equipment information is not stored in the information database, the third information transmission unit transmits the information request signal containing the equipment information to the second information providing device capable of providing the information corresponding to the equipment information; and

when the information corresponding to the equipment information transmitted by the second information providing device is received by the third information reception unit, the first information transmission unit transmits the information corresponding to the equipment information and the predetermined information read from the information database to the extracted destination address.

261. The program according to claim 259, wherein:
a second information providing device capable of
providing information corresponding to the information
5 relating to the type of information is designated;
the third information transmission unit transmits
the information relating to the type of the information
to the designated second information providing device.

10 262. The program according to claim 260, wherein:
a second information providing device capable of
providing information corresponding to the equipment
information is designated;
the third information transmission unit transmits
15 the equipment information to the designated second
information providing device.

263. The program according to claim 262, wherein
the distribution contains at least one or more of
20 a maker name of the information acquisition device, a
model number, a product serial number, and version
information about firmware.

264. The program according to claim 241, wherein
25 the information transmitted by the first

information transmission unit is modified.

265. The program according to claim 264, wherein
the modification of the information is
5 compression or encryption of information.